Appl. No.: 10/613,597 Attorney Docket: FS01-003 Reply to Office action of 12/07/2006

Amdt. Dated: 12/18/2006

## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## In the Claims:

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1. (Currently amended): A diversity receiver system for receiving coded data modulated signal signals from a transmission channel, said transmission channel characterized by multiple transmission paths having variable transmission time and variable attenuation characteristics causing multiple copies of said coded data modulated signal, wherein said diversity receiver system comprises:

> a signal acquisition device in communication with the transmission channel for reception of said multiple copies of said coded data modulated signal, for evaluation of signal characteristics of one or more copies of said multiple copies of said coded data modulated signal, for extraction extracting coded data, control signals, and locking signals from the one or more copies of said multiple copies of said coded data;

a diversity circuit in communication with the signal acquisition device to receive said signal characteristics and said coded data, said control signals, and locking signals, said diversity circuit selecting from said signal characteristics, said control Appl. No.: 10/613,597 Amdt. Dated: 12/18/2006

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signals, and said locking signals, one of said copies of said 18 coded data modulated signals; and 19 an error evaluation circuit in communication with the diversity circuit 20 to receive the coded data from the selected copy of the coded 21 data modulated signal, said error evaluation circuit evaluating 22 said coded data signal for errors and providing an error signal to 23 said diversity circuit indicating an error state of said selected 24 data, wherein said diversity circuit selects a second copy of said 25 coded data modulated signal. 26

2. (Original): The diversity receiver system of claim 1 wherein the signal acquisition device comprises:

a plurality of receiving transducers in communication with said transmission channel, each transducer acquiring one of said copies of the coded data modulated signal from said transmission channel and converting said copy of the coded data modulated signal to a received electrical signal, said received electrical signal varying in magnitude dependant upon the transmission time and variable attenuation characteristics of said transmission channel; and

a plurality of receivers, each receiver in communication with one of said receiving transducers to amplify and condition said

electrical signal and to extract said coded data, control signals, and locking signals from said received electrical signal.

- Original): The diversity receiver system of claim 2 wherein each of the plurality of the receiving transducers are assigned a selection priority such that the receiver in communication with a receiving transducer of a highest priority is selected by said diversity circuit.
- 4. (Original): The diversity receiver system of claim 2 wherein if said error signal indicates said selected data is in error, the diversity circuit determines another receiver having a valid locking signal and transfers the data of said receiver to the error evaluation circuit.
- 1 5. (Original): The diversity receiver system of claim 2 wherein if the error
  2 evaluation circuit indicates said selected data is in error but is correctable,
  3 said error evaluation circuit corrects said selected data.
- 1 6. (Original): The diversity receiver system of claim 2 further comprising a
  2 data register in communication with said diversity circuit to retain said
  3 selected data and in communication with the error evaluation circuit so
  4 that said error evaluation circuit can retrieve said selected data.
- 7. (Original): The diversity receiver system of claim 2 further comprising a de-interleaving circuit in communication with the diversity circuit to

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organize said selected data such that said selected data is in a contiguous order prior to transfer to said error evaluation circuit.

8. (Original): The diversity receiver system of claim 1 wherein the signal acquisition device comprises:

- a plurality of receiving transducers in communication with said
  transmission channel, each transducer acquiring one of said
  copies of the coded data modulated signal from said
  transmission channel and converting said copy of the coded
  data modulated signal to a received electrical signal, said
  received electrical signal varying in magnitude dependant upon
  the transmission time and variable attenuation characteristics of
  said transmission channel;
  - an transducer switch in communication with the plurality of receiving transducers and in communication with the diversity circuit, which upon reception of a transducer selection signal from said diversity circuit selects one of said the electrical signals of a selected receiving transducer; and
  - a receiver in communication with the transducer switch to amplify
    and condition said electrical signal from selected receiving
    transducer and to extract said coded data, control signals, and
    locking signals from said received electrical signal and in

communication with the error evaluation circuit to transfer said coded data to the error evaluation circuit.

- 9. (Original): The diversity receiver system of claim 8 wherein each of the
  plurality of the receiving transducers are assigned a selection priority such
  that the receiving transducer of a highest priority is selected by said
  diversity circuit.
- 10. (Original): The diversity receiver system of claim 8 wherein if said error
  signal indicates said coded data received and extracted from the electrical
  signal of the selected receiving transducer is in error, the diversity circuit
  generates the transducer selection signal to select a second electrical
  signal from a second receiving transducer to be transferred to the
  receiver, said second electrical signal then having a valid locking signal
  and transfers the data of said receiver to the error evaluation circuit.
- 1 11. (Original): The diversity receiver system of claim 8 wherein if the error
  evaluation circuit indicates said coded data received and extracted from
  the electrical signal of the selected receiving transducer is in error but is
  correctable, said error evaluation circuit corrects said coded data received
  and extracted from the electrical signal of the selected receiving
  transducer.
- 1 12. (Original): The diversity receiver system of claim 8 further comprising a
  2 data register in communication with said diversity circuit to retain said

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coded data received and extracted from the electrical signal of the selected receiving transducer and in communication with the error evaluation circuit so that said error evaluation circuit can retrieve said 5 coded data.

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- 13. (Original): The diversity receiver system of claim 7 further comprising a 1 2 de-interleaving circuit in communication with the diversity circuit to organize said selected data such that said coded data received and 3 extracted from the electrical signal of the selected receiving transducer is 4 in a contiguous order prior to transfer to said error evaluation circuit. 5
- (Currently amended): A method for receiving coded data modulated signal 1 14. signals from a transmission channel, said transmission channel 2 characterized by multiple transmission paths having variable transmission 3 time-times and variable attenuation characteristics causing multiple copies 4 of said coded data modulated signal, said method for receiving the coded 5 data modulated signal comprising the steps of: 6
  - a) acquiring the multiple copies of coded data modulated signal;
  - b) evaluating signal characteristics of one or more copies of said multiple copies of said coded data modulated signal;

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10		c) extracting coded data, control signals, and locking signals from
11		the one or more copies of said multiple copies of said coded
12		data;
13		d) selecting one of said copies of said coded data modulated
14		signals from said signal characteristics, said control signals,
15		and said locking signals;
16		e) performing an error check and correction upon said coded data;
17		and
18		f) if the error check and correction is not able to correct said coded
19		data, repeating steps d) and e) until a data block is
20		successfully received.
1	15.	(Original): The method of claim 14 wherein the step of extracting the
2		coded data includes the step of rearranging the coded data such that data
3		within said coded data is in contiguous order.
1	16.	(Original): The method of claim 14 wherein creating the locking signal
2		comprises the steps of:
3		detecting a synchronization signal within said coded data
4		modulated signal:

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synchronizing said receiver to said coded data modulated signal;
and

detecting the control signals indicative of a beginning of said

plurality of data blocks within said coded data modulated signal.

- 17. (Original): The method of claim 14 wherein each copy of the multiple

  copies of the coded data modulated signal is assigned a selection priority

  such that selecting one of the multiple copies of the coded data modulated

  signals comprises the step of choosing the copy of the multiple copies of

  modulated coded data having a highest priority.
- 1 18. (Currently amended): An apparatus for receiving coded data modulated
  2 signal signals from a transmission channel, said transmission channel
  3 characterized by multiple transmission paths having variable transmission
  4 time-times and variable attenuation characteristics causing multiple copies
  5 of said coded data modulated signal, said apparatus for receiving the
  6 coded data modulated signal comprising the steps of:

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- a) means for acquiring the multiple copies of coded data modulated signal;
- b) means for evaluating signal characteristics of one or more

  copies of said multiple copies of said coded data modulated

  signal;

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c) means for extracting coded data, control signals, and locking 12 signals from the one or more copies of said multiple copies 13 14 of said coded data; d) means for selecting one of said copies of said coded data 15 modulated signals from said signal characteristics, said 16 17 control signals, and said locking signals; e) means for performing an error check and correction upon said 18 coded data; and 19 f) means for repeatedly activating means d) and e) until a data 20 block is successfully received, if the error check and 21 correction is not able to correct said coded data. 22 19. (Original): The apparatus of claim 18 wherein the means for extracting the 1 coded data includes means for rearranging the coded data such that data 2 within said coded data is in contiguous order. 3 20. (Original): The apparatus of claim 18 wherein means for creating the 1 locking signal comprises: 2 means for detecting a synchronization signal within said coded data 3 modulated signal; 4

means for synchronizing said receiver to said coded data 5 modulated signal; and 6 means for detecting the control signals indicative of a beginning of 7 said plurality of data blocks within said coded data modulated 8 signal. 9 21. (Original): The apparatus of claim 18 wherein each copy of the multiple 1 copies of the coded data modulated signal is assigned a selection priority 2 such that means for selecting one of the multiple copies of the coded data 3 modulated signals comprises means for choosing the copy of the multiple 4 copies of modulated coded data having a highest priority. 5 22. (Original): An apparatus for receiving coded data modulated signal from a 1 transmission channel, said transmission channel characterized by multiple 2 transmission paths having variable transmission time and variable 3 attenuation characteristics causing multiple copies of said coded data 4

a) acquiring the multiple copies of coded data modulated signal;

modulated signal, said apparatus executing a process for receiving the

coded data modulated signal comprising the steps of:

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 b) evaluating signal characteristics of one or more copies of said multiple copies of said coded data modulated signal; Appl. No.: 10/613,597 Attorney Docket: FS01-003 Reply to Office action of 12/07/2006

10		c) extracting coded data, control signals, and locking signals from
11		the one or more copies of said multiple copies of said coded
12		data;
13		d) selecting one of said copies of said coded data modulated
		signals from said signal characteristics, said control signals,
14		
15		and said locking signals;
16		e) performing an error check and correction upon said coded data;
17		and
17		and
18		f) if the error check and correction is not able to correct said coded
19		data, repeating steps d) and e) until a data block is
20		successfully received.
1	23.	(Original): The apparatus of claim 22 wherein the step of extracting the
2		coded data includes the step of rearranging the coded data such that data
3		within said coded data is in contiguous order.
1	24.	(Original): The apparatus of claim 22 wherein creating the locking signal
2		comprises the steps of:
3		detecting a synchronization signal within said coded data
4		modulated signal;

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synchronizing said receiver to said coded data modulated signal;

and 6 detecting the control signals indicative of a beginning of said 7 plurality of data blocks within said coded data modulated signal. 8 25. (Original): The apparatus of claim 22 wherein each copy of the multiple 1 2 copies of the coded data modulated signal is assigned a selection priority such that selecting one of the multiple copies of the coded data modulated 3 signals comprises the step of choosing the copy of the multiple copies of 4 5 modulated coded data having a highest priority. 26. (Original): A diversity receiver system for receiving a broadcast signal 1 modulated with coded data, having multiple transmission paths, said 2 3 diversity receiver comprising: a plurality of receiving transducers, each transducer acquiring said 4 broadcast signal and converting said broadcast signal to a 5 received electrical signal, said received electrical signal varying 6 in magnitude dependant upon an intensity of said broadcast 7 signal traversing said multiple transmission paths; 8 a plurality of receivers, each receiver in communication with one of 9 said receiving transducers to amplify and condition said 10

electrical signal and to extract data and locking signals from said received electrical signal;

a diversity circuit in communication with each of the plurality of receivers to receive said data and locking signals, said diversity circuit selecting one of the data signals from one of the plurality of receivers having a valid locking signal indicating said receiver is able to retrieve said coded data from the electrical signal; and an error evaluation circuit in communication with the diversity circuit to receive the selected data signal, said error evaluation circuit evaluating said selected data signal for errors and providing an error signal to said diversity circuit indicating an error state of

27. (Original): The diversity receiver system of claim 26 wherein if said error signal indicates said selected data is in error, the diversity circuit determines another receiver having a valid locking signal and transfers the data of said receiver to the error evaluation circuit.

said selected data.

28. (Original): The diversity receiver system of claim 26 wherein if the error evaluation circuit indicates said selected data is in error but is correctable, said error evaluation circuit corrects said selected data.

1 29. (Currently amended): The diversity receiver system of claim 126 claim 26

further comprising a data register in communication with said diversity

circuit to retain said selected data and in communication with the error

evaluation circuit so that said error evaluation circuit can retrieve said

selected data.

- 1 30. (Original): The diversity receiver system of claim 26 further comprising a
  2 de-interleaving circuit in communication with the diversity circuit to
  3 organize said selected data such that said selected data is in a contiguous
  4 order prior to transfer to said error evaluation circuit.
- 1 31. (Currently amended): A method for receiving a broadcast signal 2 modulated with coded data comprising the steps of:

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- a) acquiring said broadcast signal at one of a plurality of receivers;
- b) creating a locking signal indicating said receiver has successfully acquired said broadcast signal;
  - c) if said locking signal is able is not able to be created, repeating steps a) and b) until a locking signal is created indicating successful acquisition of said broadcast signal;
  - d) extracting one data block of a plurality of data blocks of said coded data from said broadcast signal;

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e) performing an error check and correction upon said data block 11 for eliminating errors from said data block; 12 f) if the error check and correction is not able to correct said data 13 14 block, repeating steps a) through e) until a data block is successfully received; and 15 g) repeatedly performing said error check and correction until all 16 17 remaining data blocks of said broadcast signal are extracted 18 and successfully checked and corrected for errors. 32. (Original): The method of claim 31 wherein the step of extracting the data 1 block includes the step of rearranging the data block such that data within 2 said data block is in contiguous order. 3 33. (Original): The method of claim 31 wherein creating the locking signal 1 comprises the steps of: 2 detecting a synchronization signal within said broadcast signal; 3 synchronizing said receiver to said broadcast signal; and 4 detecting a start signal indicative of a beginning of said plurality of 5 data blocks within said broadcast signal. 6 (Currently amended): An apparatus for receiving a broadcast signal 34. 1 modulated with coded data comprising: 2

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3	a) means for acquiring said broadcast signal at one of a plurality of
4	receivers;
5	b) means for creating a locking signal indicating said receiver has
6	successfully acquired said broadcast signal;
7	c) means for activating the means of a) and b) until a locking signal
8	is created indicating successful acquisition of said broadcast
9	signal, if said locking signal is able to be created; created;
10	d) means for extracting one data block of a plurality of data blocks
11	from said broadcast signal;
12	e) means for performing an error check and correction upon said
13	data block for eliminating errors from said data block;
14	f) means for activating the means of a) through e) until a data block
15	is successfully received, if the error check and correction is
16	not able to correct said data block; and
17	g) means for repeatedly performing said error check and correction
18	until all remaining data blocks of said broadcast signal are
19	extracted and successfully checked and corrected for errors.

1 35. (Original): The apparatus of claim 34 wherein the means for extracting the
2 data block includes means for rearranging the data block such that data
3 within said data block is in contiguous order.

- 1 36. (Original): The apparatus of claim 34 wherein means for creating the locking signal comprises:
- means for detecting a synchronization signal within said broadcast signal;
- means for synchronizing said receiver to said broadcast signal; and
  means for detecting a start signal indicative of a beginning of said
  plurality of data blocks within said broadcast signal.
- 37. (Currently amended): An apparatus for acquiring coded data from a 1 plurality of receivers receiving transducers, each receiver in 2 communication with one of a plurality receiving transducers to amplify and 3 condition an electrical signal acquired by said receiving transducers and 4 extract said coded data and locking signals from said received electrical 5 signal, each receiving transducer acquiring a broadcast signal and 6 converting said broadcast signal to said received electrical signal, said 7 received electrical signal varying in magnitude dependant upon an 8 9 intensity of said broadcast signal, said digital signal processing system executing a program comprising the steps of: 10

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11		a) selecting one of said plurality of receivers;
12		b) detecting said locking signal indicating said receiver has
13		successfully acquired said broadcast signal;
14		c) if said locking signal is not able to be created by said, repeating
15		steps a) and b) until a locking signal is created indicating
16		successful acquisition of said broadcast signal;
17		d) extracting one data block of a plurality of data blocks of said
18		coded data from said electrical signal;
19		e) performing an error check and correction upon said data block
20		for eliminating errors from said data block;
21		f) if the error check and correction is not able to correct said data
22		block, repeating steps a) through e) until a data block is
23		successfully received; and
24		g) repeatedly performing said error check and correction until all
25		remaining data blocks of said electrical signal are extracted
26		and successfully checked and corrected for errors.
1	38.	(Original): The apparatus of claim 37 wherein the step of extracting the
2		data block includes the step of rearranging the data block such that data
3		within said data block is in contiguous order.

39. (Original): The apparatus of claim 37 wherein creating the locking signal comprises the steps of:

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detecting a synchronization signal within said broadcast signal;
synchronizing said receiver to said broadcast signal; and
detecting a start signal indicative of a beginning of said plurality of
data blocks within said broadcast signal.

(Original): A diversity receiver system for receiving coded data modulated signal from a transmission channel, said transmission channel characterized by multiple transmission paths having variable transmission time and variable attenuation characteristics causing multiple copies of said coded data modulated signal, wherein said diversity receiver system comprises:

a plurality of receiving transducers in communication with said transmission channel, each transducer acquiring one of said copies of the coded data modulated signal from said transmission channel and converting said copy of the coded data modulated signal to a received electrical signal, said received electrical signal varying in magnitude dependant upon the transmission time and variable attenuation characteristics of said transmission channel;

a transducer switch in communication with the plurality of receiving

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transducers, which upon reception of a transducer selection 16 signal selects one of said the electrical signals of a selected 17 receiving transducer; 18 a receiver in communication with the transducer switch to amplify 19 and condition said electrical signal from a selected receiving 20 transducer and to extract said coded data, control signals, and 21 locking signals from said received electrical signal. 22 a diversity circuit in communication with the receiver to receive said 23 24 signal characteristics and said coded data, said control signals, and locking signals, and in communication with the transducer 25 switch, said diversity circuit selecting from said signal 26 characteristics, said control signals, and said locking signals, 27 generates the transducer selection signal designating one of 28 said copies of said coded data modulated signals; and 29 30 an error evaluation circuit in communication with the receiver to receive the coded data from the selected copy of the coded data 31 modulated signal, said error evaluation circuit evaluating said 32 coded data signal for errors and providing an error signal to said 33

diversity circuit indicating an error state of said selected data,

wherein said diversity circuit generates a second transducer

selection signal to select a second copy of said coded data
modulated signal.

- 1 41. (Original): The diversity receiver system of claim 40 wherein each of the
  2 plurality of the receiving transducers are assigned a selection priority such
  3 that the receiving transducer of a highest priority is selected by said
  4 diversity circuit.
- 1 42. (Original): The diversity receiver system of claim 40 wherein if said error
  2 signal indicates said coded data received and extracted from the electrical
  3 signal of the selected receiving transducer is in error, the diversity circuit
  4 generates the transducer selection signal to select a second electrical
  5 signal from a second receiving transducer to be transferred to the
  6 receiver, said second electrical signal then having a valid locking signal
  7 and transfers the data of said receiver to the error evaluation circuit.
- 1 43. (Original): The diversity receiver system of claim 40 wherein if the error
  2 evaluation circuit indicates said coded data received and extracted from
  3 the electrical signal of the selected receiving transducer is in error but is
  4 correctable, said error evaluation circuit corrects said coded data received
  5 and extracted from the electrical signal of the selected receiving
  6 transducer.
- 1 44. (Original): The diversity receiver system of claim 40 further comprising a
  2 data register in communication with said diversity circuit to retain said

coded data received and extracted from the electrical signal of the selected receiving transducer and in communication with the error evaluation circuit so that said error evaluation circuit can retrieve said coded data.

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- 45. (Original): The diversity receiver system of claim 40 further comprising a de-interleaving circuit in communication with the diversity circuit to 2 organize said selected data such that said coded data received and 3 extracted from the electrical signal of the selected receiving transducer is 4 in a contiguous order prior to transfer to said error evaluation circuit. 5
- 1 46. (Original): A method for receiving coded data modulated signal from a transmission channel, said transmission channel characterized by multiple 2 transmission paths having variable transmission time and variable 3 attenuation characteristics causing multiple copies of said coded data 4 modulated signal, said method for receiving the coded data modulated 5 signal comprising the steps of: 6
  - a) setting a priority value for each of a plurality of receiving transducers, said plurality of receiving transducers in communication with the transmission channel such that said receiving transducers convert one of the copies of the coded data modulated signal to a received electrical signal;

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12		b) selecting one of the plurality of receiving transducers having a
13		highest priority;
14		c) evaluating signal characteristics of said received electrical signal
15		from the one receiving transducer having the highest priority;
16		d) extracting coded data, control signals, and locking signals from
17		the received electrical signal from the one receiving
18		transducer having the highest priority;
19		e) performing an error check and correction upon said coded data;
20		f) if the signal characteristics, control signals, locking signals, and
21		results of said error check and correction indicate that the
22		received electrical signal is not adequate for reconstruction
23		of coded data from said received electrical signal, adjusting
24		said priority value of said receiving transducer to a lower
25		priority; and
26		g) repeating steps d) through f) until said coded data is successfully
27		received.
1	47.	(Original): The method of claim 46 wherein the step of extracting the
2		coded data includes the step of rearranging the coded data such that data
3		within said coded data is in contiguous order.

1 48. (Original): The method of claim 46 wherein extracting the control signals
2 and the locking signal comprises the steps of:

detecting a synchronization signal within said coded data modulated signal;

synchronizing said receiver to said coded data modulated signal;
and

detecting the control signals indicative of a beginning of said plurality of data blocks within said coded data modulated signal.

- 49. (Original): An apparatus for receiving coded data modulated signal from a transmission channel, said transmission channel characterized by multiple transmission paths having variable transmission time and variable attenuation characteristics causing multiple copies of said coded data modulated signal, said apparatus for receiving the coded data modulated signal comprising:
  - a) means for setting a priority value for each of a plurality of receiving transducers, said plurality of receiving transducers in communication with the transmission channel such that said receiving transducers convert one of the copies of the coded data modulated signal to a received electrical signal;

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b) means for selecting one of the plurality of receiving transducers having a highest priority; 13 c) means for evaluating signal characteristics of said received 14 electrical signal from the one receiving transducer having the 15 16 highest priority; d) means for extracting coded data, control signals, and locking 17 signals from the received electrical signal from the one 18 receiving transducer having the highest priority; 19 e) means for performing an error check and correction upon said 20 coded data; 21 f) means for adjusting said priority value of said receiving 22 transducer to a lower priority, if the signal characteristics, 23 control signals, locking signals, and results of said error 24 check and correction indicate that the received electrical 25 signal is not adequate for reconstruction of coded data from 26 said received electrical signal; and 27 g) means for repeatedly activating means of d) through f) until said 28 coded data is successfully received. 29

1 50. (Original): The apparatus of claim 49 wherein the means for extracting the coded data includes the step of rearranging the coded data such that data within said coded data is in contiguous order.

- 1 51. (Original): The apparatus of claim 49 wherein means for extracting the control signals and the locking signal comprises the:
- means for detecting a synchronization signal within said coded data modulated signal;
- 5 means for synchronizing said receiver to said coded data
  6 modulated signal; and
- means for detecting the control signals indicative of a beginning of said plurality of data blocks within said coded data modulated signal.
- 1 52. (Original): An apparatus for receiving coded data modulated signal from a
  2 transmission channel, said transmission channel characterized by multiple
  3 transmission paths having variable transmission time and variable
  4 attenuation characteristics causing multiple copies of said coded data
  5 modulated signal, said apparatus for receiving the coded data modulated
  6 signal executing a process comprising the steps of:
  - a) setting a priority value for each of a plurality of receiving
     transducers, said plurality of receiving transducers in

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communication with the transmission channel such that said

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receiving transducers convert one of the copies of the coded 10 data modulated signal to a received electrical signal; 11 b) selecting one of the plurality of receiving transducers having a 12 13 highest priority; c) evaluating signal characteristics of said received electrical signal 14 from the one receiving transducer having the highest priority; 15 d) extracting coded data, control signals, and locking signals from 16 the received electrical signal from the one receiving 17 transducer having the highest priority; 18 e) performing an error check and correction upon said coded data; 19 f) if the signal characteristics, control signals, locking signals, and 20 results of said error check and correction indicate that the 21 received electrical signal is not adequate for reconstruction 22 of coded data from said received electrical signal, adjusting 23 said priority value of said receiving transducer to a lower 24 priority; and 25 g) repeating steps d) through f) until said coded data is successfully 26 received. 27

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1 53. (Original): The apparatus of claim 52 wherein the step of extracting the
2 coded data includes the step of rearranging the coded data such that data
3 within said coded data is in contiguous order.

- 1 54. (Original): The apparatus of claim 52 wherein extracting the control signals
  2 and the locking signal comprises the steps of:
- detecting a synchronization signal within said coded data
  modulated signal;
- synchronizing said receiver to said coded data modulated signal;
  and
- detecting the control signals indicative of a beginning of said

  plurality of data blocks within said coded data modulated signal.